

Claims

1. A skinned structure wherein the skin is composed of welded hardenable steel plates or sheets.
2. The structure of claim 1, wherein the hardenable steel plates or sheets are of air hardenable stainless steel.
3. The structure of claim 1, wherein the hardenable steel plates or sheets are of liquid quench hardenable steel.
4. The structure of claim 1, wherein the skinned structure is a ship hull.
5. The structure of claim 1, wherein the skinned structure is a storage tank.
6. The structure of claim 1, wherein the skinned structure is an aircraft.
7. The structure of claim 1, wherein the skinned structure is a moving vehicle body.
8. The structure of claim 1, wherein the skinned structure is a building wall.
9. A method of constructing a skinned structure of air hardenable steel plates or sheets, the method comprising:
placing multiple annealed air hardenable steel plates or sheets over a framework;
welding the adjacent edges of the air hardenable steel plates or sheets to create a continuous skin;
controlling the cooling rate of each welded seam;
and heat-treating the entire skin to a high strength condition.
10. The method of claim 9, wherein the steel plates or sheets are of air hardenable stainless steel.
11. The method of claim 9, wherein the heat-treating is accomplished by a belt-like device comprising:
a continuous band of elements flexibly connected together;

heat inducing means mounted on each element;
means for supporting the belt in close contact to the surface of a structure;
and means for moving the belt from one end of the structure to the other.

12. The method of claim 11, the belt-like device further including cool air blast- or liquid spray cooling-nozzles mounted on the trailing edge of the device.
13. The method of claim 9, wherein said framework includes air hardenable steel; and further including means to insulate the frame from the skin when the skin is being heat-treated.
14. The method of claim 13, wherein said means to insulate the frame is a layer permanently sandwiched between the frame and the skin.
15. The method of claim 13, wherein said means to insulate the frame comprises an air gap temporarily provided by shifting the frame members inward during heat treating of the skin.
16. The method of claim 13, wherein said air hardenable steel framework is fastened to the skin by flanges or studs welded to the skin.
17. A method of constructing a skinned structure of liquid quench hardenable steel plates or sheets, the method comprising:
placing multiple liquid quench hardenable steel plates or sheets over a framework;
welding the adjacent edges of the liquid quench hardenable steel plates or sheets to create a continuous skin;
and heat-treating the entire skin to a high strength condition.
18. The method of claim 17, wherein the heat-treating is accomplished by a belt-like device comprising:
a continuous band of elements flexibly connected together;
heat inducing means mounted on each element;
means for supporting the belt in close contact to the surface of a structure;
and means for moving the belt from one end of the structure to the other.

19. The method of claim 18, the belt-like device further including cool air blast- or liquid spray cooling-nozzles mounted on the trailing edge of the device.
20. The method of claim 17, wherein said framework includes air hardenable steel; and further including means to insulate the frame from the skin when the skin is being heat-treated.
21. The method of claim 20, wherein said means to insulate the frame is a layer permanently sandwiched between the frame and the skin.
22. The method of claim 20, wherein said means to insulate the frame comprises an air gap temporarily provided by shifting the frame members inward during heat treating of the skin.